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[Competence in Young Children.]

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Four papers discuss the Harvard Preschool Project whose goal is to learn how to structure the experiences of the first six years of life to encourage maximal development of human competence. To determine what competence at age 6 is, a group of 13 highly competent 6-year-olds of mixed residence, class, and ethnicity were compared to a like group of 13 low competence 6-year-olds and the resultant information was collected in protocols. From this material, a list of differentiating abilities, some social and some nonsocial, was compiled. Highly competent 3-year-olds were found to be more advanced in these abilities than 6-year-olds who were doing poorly. As there was little competence divergence at age one, it was clear that an investigation of the interaction of experience and the development of competence should be focused on the second and third years of life, (mostly familial experiences). To measure comparative experiential histories, an instrument was developed for codification of moment-to-moment behavior on the basis of inferred purpose. The next step will be the collection and analysis of data from families that have succeeded or failed to develop children of high competence. Also planned are longitudinal studies in which children will follow task sequences designed for optimal development. (MH)

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Pre-School Project
Laboratory of Human Development
Harvard Graduate School of Education

An Overview of the Project*

by

Burton L. White

*Symposium presented at:

Society for Research in Child Development
Santa Monica, California
March 26-29, 1969

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by

Burton L. White
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An Overview of the Project

The simply-stated goal of the Pre-School Project is fundamentally practical and clearly very ambitious. We are concerned with the problem of how to structure the experiences of the first six years of life as to encourage maximal development of human competence. Such a gcal leads naturally to a consideration of two problem areas: 1) What specifically is human competence in six-year-old children, and 2) how do we learn the details of the interactions between early experience and the development of such competence?

What specifically is human competence at six?

We have attempted to follow the lead of the European ethologists (Lorenz, Tinbergen, etc.) in dealing with this problem. Initially, we selected as broad an array of types of six-year-old children as we could. Our original sample consisted of some 400, three-, four-, and five-year-old children living in Eastern Massachusetts. We reached the children through 17 pre-school institutions, (kindergartens and nursery schools). These children varied in at least the following dimensions: 1) from rural to suburban and urban residence, 2) SES - lower-lower to lower-upper class, 3) ethnicity - Irish, Italian, Jewish, English, Portuguese, Chinese, and several other types were included. On the basis of extensive, independent observations by 15 staff members and the teachers of these children, and also on the basis of their performance on objective tests such as the WIPPSI and tests of motor and sensory capacities, we isolated two small groups of children. One group of about 13 was judged to be very high on overall competence. These children seemed to be able to cope in superior fashion with

just about anything that they met day in and day out. Another group of about 13 was judged to be free from gross pathology but generally of very low competence. We then proceeded to observe these children each week for a period of eight months. We gathered some 1,100 protocols on the typical moment-to-moment activities of these children; mostly in the institutions, but also in their homes. Through intensive discussions of these materials, by our staff of 20 people, we compiled a list of abilities that seemed to distinguish the two groups. These abilities were divided into social and non-social types. It should be noted that not all abilities of six-year-olds are included. We concluded, for example, that differences in motor and sensory capacities between children of high and low overall competence, were generally quite modest. The resultant list of distinguishing abilities represents an observationally-based differentiated description of what we mean by competence at six.

The list is as follows:

Non-Social Abilities

1) Linguistic competence; i.e., grammatical capacity, vocabulary, articulation, and extensive use of expressed language.

2) Intellectual competence

   a) the ability to sense dissonance or note discrepancies

   b) the ability to anticipate consequences

   c) the ability to deal with abstractions; i.e., numbers, letters, rules

d) the ability to take the perspective of another

e) the ability to make interesting associations

3) Executive abilities

a) the ability to plan and carry out multi-stepped activities

b) the ability to use resources effectively

4) Attentional ability

the ability to maintain attention to a proximal task and at the same time to monitor peripheral events

Social Abilities

1) to get and maintain the attention of adults in socially-acceptable ways

2) to use adults as resources

3) to express both affection and hostility to adults

4) to lead and to follow peers

5) to express both affection and hostility to peers

6) to compete with peers

7) to show pride in one's accomplishments

8) to involve oneself in adult role-play behavior or to otherwise express desire to grow up.

On the basis of our original protocol material and additional observational data collected the following year, we concluded that three-year-olds who were developing well were considerably more advanced in these ability dimensions than six-year-olds who were doing very poorly. We, therefore, decided that we should begin our studies

of the role of experience in the development of competence in the first three years of life.

Experience and the Development of Competence

Some children in our society seem to have acquired by age three, functional use of the set of abilities we have found to characterize outstanding six-year-olds. More often than not, these children apparently have not undergone any formal training experiences. Our approach to the problem of how experience contributes to the early development of competence parallels our approach to the specification of competence at six. We now are studying various patterns of ongoing experience of children during the first three years of life. By comparing the experiential histories of children developing along optimal lines during that period with comparable information on children developing in what appears to be very poor fashion, we hope to isolate important differences which will serve as bases for the design of experimental-intervention studies.

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Non-Social Competence

You will remember we described the laborious process by which we isolated abilities which distinguish very competent six-year-olds as they go about their daily activities. Our aim was to induce these qualities from the records of behavior.

The non-social abilities which seem to us to characterize very able six-year-olds most clearly can be organized into four groups:

1) Linguistic competence; i.e., grammatical capacity, vocabulary, articulation, and frequent use of expressed language.

2) Intellectual competence:

   a) the ability to sense dissonance or note discrepancies

   b) the ability to anticipate consequences

   c) the ability to deal with abstractions; i.e., numbers, letters, rules

   d) the ability to take the perspective of another

   e) the ability to make interesting associations

3) Executive abilities:

   a) the ability to plan and carry out multi-stepped activities

   b) the ability to use resources effectively

4) Attentional ability:

   the ability to maintain attention to a proximal task and at the same time to monitor peripheral events.

The preliminary isolation of these target abilities is being followed by tests of their validity and inquiry into their early development. Neither project has progressed quite as far as we would like.

We are designing tests of both concurrent and predictive validity.

We must determine whether standing on these abilities is indeed indicative of overall competence at six and also of potential for future development.

The Development of target abilities

A set plan is being followed for each of the abilities. It consists of the following steps:

1) identification of the ability from group discussions of observational data
2) collection of manifestations of the ability
3) careful definition of the ability
4) search of the literature for previous relevant work
5) a first sketch of the development of the ability during the one- to three-year-age range
6) field observations in the one- to three-year-age range
7) selection of development of assessment techniques (very few exist for one- to three-year-olds)
8) reliability studies on new assessment techniques
9) gathering cross-sectional data on one- to three-year-olds
10) gathering longitudinal data on one- to three-year-olds

One of the discriminating non-social abilities which emerged from the natural observations in nursery school settings was labelled "dual focus." We refer here to a particular kind of attending behavior which is characterized by simultaneous (or quick alternation of) attention to

both a proximal task and to peripheral input.* The dual focusing child masters the proximal task while selectively attending to and processing peripheral input. The "visual" form of this ability is readily observable; i.e., the child's gaze is primarily directed towards the proximal task but is regularly reoriented towards the surround. Its "auditory" form is not easily observable, since significant reorientation of the head or body is not required in order to hear peripheral input. We assumed that several kinds of dual focus were taking place, involving visual-visual mixes, visual-auditory mixes, and auditory-auditory mixes.

After having grossly defined dual focus, the next step was to deal with the problem of measurement. Since we could find no existing instruments, we constructed several which were designed to tap various forms of dual focus. For example, we developed one test of auditory-auditory mix in which there was an <u>assigned</u> proximal task and an incidental peripheral task. This test involved informing the child that he would hear clicks on a tape and instructing him to raise his hand every time he heard a click. After a warm-up period, a tape was played which included clicks and a short (100-seconds) nursery school level story. Listening to the story constituted the peripheral task. While the tape was running, E recorded all the correct hand raising responses of the child. After the story was completed, E asked the child five factual questions about the story to see if he had been processing the

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*Members of our project who have worked on this topic were Dr. Patrick Lee and Mr. Richard Mansfield.

peripheral input. Children who did well on both tasks were considered dual focusers, while those who did well only on one or the other or on neither were considered single focusers.

Another test of auditory-auditory mix was developed in which the child could choose the focal task. A tape was played containing a female voice reading a 50-second story while a male voice at 5-second intervals named the colors orange, black, brown, green or purple. Subsequently, the child was asked five factual questions about the story and in turn which colors the man named.

Another test was designed to test visual-auditory mix. The visual task was assigned as the proximal task. After appropriate warm-up, the child was asked to cross out all the triangles on several pieces of paper which contained other geometric shapes as well. While crossing out the triangles a story was played on a tape recorder. After the tape ended, the child was asked several questions about the story. His proficiency in crossing out triangles was also recorded.

Three additional tests were developed for the dual focus abilities. A pilot study was performed with 58 four- to six-year-old children. Performance on the six experimental assessment techniques was correlated with teacher ratings of the overall competence levels of the children and with the age of the subject. Correlations with each of the six tasks and competence rating ranged from (+.436 to +.816). The top five figures are significant. Correlation of competence rating with overall performance on the six tests was (+ .777 sign. @ .01 level).

PS 002117

Correlation between test performance and age over the four- to six-and one-half-year period ranged from (+.048 to + .361) for individual tests and was (+ .319 sign. @ .05 level) for overall performance. The only index of reliability we procurred in this pilot venture is in the homogeneity of sub-test scores. The range of values obtained (+ .436 to + .816) is at least a hopeful sign. Of course, it goes almost without saying that we have more work to do in develcping techniques for assessing dual-focusing ability. In particular, the parallel task for subjects in the one- to three-age range will be considerably more difficult.

An example of our approach to the problem of assessing the target abilities in the one- to three-age range is our treatment of language development during the second year of life. The literature reveals little detailed knowledge about receptive linguistic ability in this period. Correspondingly, there appear to be few well-developed assessment techniques for such abilities during this age range. Most existing tests seem to depend very heavily on maternal reports of the infant's capacity; e.g., the mother is asked to indicate how many words the child understands, how many he expresses, etc. Our observations have enabled us to outline a more detailed though preliminary picture of linguistic development during this period.*

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* Work on language development was performed by Mrs. Mary Meader Mokler and Miss Eta Berner

For the second year of life, we are developing procedures for assessing vocabulary and grammatical development. With regard to vocabulary we are concentrating on the sequence which may begin with regular but idiosyncratic labeling of objects, proceed through the use of public terminology for familiar objects only, and culminate in the use of public labels for several examples of a class. We are using this spread of meaning from the highly specific and personal form to a conventional use of class labels as the basis of an ordinal scale of vocabulary development. We prefer this qualitative approach to the topic in the second year because of the enormous variability noted for this age range by studies of quantitative vocabulary growth.

As for grammatical development, our field observations have suggested a progression of the following sort for the second year:

1) any sound accompanying activity; e.g., gurgling or crying
2) simple sounds appropriate for the situation but idiosyncratic; e.g., "vroom" as the infant races the wheels of a car or "boom" after he falls down
3) intonational patterns resembling those in English sentences though no words are intelligible
4) mimicing words or phrases after another person
5) simple labeling with publicly-accepted words; e.g., dog, ball, etc.
6) word-gesture compounds; e.g., "more" while handing his glass to mother
7) the first expressed sentences usually very brief; e.g., all gone

We anticipate modifications in the developmental sketches as we up-grade our test techniques and gather more refined cross-sectional developmental data. For most two- to three-year-old children, our procedures are different. Vocabulary development will be assessed on a quantitative basis (using the Ammons test and objects from the work of Meyers, et al.).* Of course, in the case of poor development, the assessment techniques for the younger subjects will probably be useful well beyond the second year of life. Grammatical ability will be assessed primarily through the use of a new technique which represents an application of some of Ursula Bellugi-Klima's ideas on the assessment of grammatical development in very young children. We will, for example, attempt to assess the degree of facility in the use of the various rules governing sentence structure transformations.

The resultant picture of linguistic development will help us plan how and when to test for these developments in our longitudinal studies. The number of non-social abilities we can track in our first longitudinal study is a function of how much financial support we can muster to continue our work. We expect at the very least to be ready to deal with four aspects of language, two of cognition and the attentional ability.

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*Four ability factor hypotheses at three pre-literate levels in normal and retarded children (C. E. Meyers, et al., Mono. SRCD, 1964, Vol. 29, No. 51).

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Concluding Remarks*

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Concluding Remarks

Next steps

Our overall plan calls for us to begin a natural longitudinal experiment this fall. The purpose of this study will be to gather data on the course of development during the second and third years of life.

More distant goals

So far, we have outlined activities which should yield a collection of information about tasks children actually face during the first three years of life. This collection will feature moment-to-moment purposes, the overriding tasks which should bring coherence to the very large number of daily tasks, and the subtasks children adopt as a means towards their immediate ends. In addition, we shall have related data such as: the source of initiation of tasks, success-failure ratios, characteristic difficulty levels, etc., etc. Such a mass of data will unquestionably be extremely valuable for any student of human development. In addition, it should serve as the locus for investigations of the role of experience in the development of educability in young children. It is, after all, in coping with tasks that children develop abilities to the extent that learning is involved. Further, the tasks children face are, in large part, a function of the interventions initiated by parents and professional educators.

The next major effort of the Pre-School Project will be an analysis of differential experiential histories of excellently- versus poorly-developing children. Starting in late 1969, approximately forty families will be observed as their children develop during the first three years

of life. The design will be cross-sectional and longitudinal, starting simultaneously with one- and two-year olds. In this "natural" experiment, not only will we be tracking the evolution of the target abilities, but we will also be following carefully both differential experiences (with the task group tools) and the environmental factors which influence them.

Finally, a series of true longitudinal-experimental studies will be launched, where cooperative families will allow us to test our hypotheses about development by designing some of the task sequences for their children during the first years of life so as to optimize development.

The result of such a program will be two sets of data. Set (E) should show one fairly high level of experience with situations designed to enhance the development of the selected target abilities. It should also show marked superiority in achievement of this group starting perhaps by age one-and-one-half and increasing to age three (the end of the study). Set (C) should show a markedly lower level of experiences of the desired kinds, and a comparably lower level of achievement of the target abilities.*

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* At this point one might ask, how in good conscience we can allow the control group to develop less than optimally? The answer is that they will be no worse off than if we were not involved and that we have no proof at the outset that our experimental conditions are clearly superior.

Clearly, with so many potential causal factors being manipulated at once, we will not be able to sort out the lawful relationships between independent and dependent variables. If we achieve significant success, however, (and we believe our chances are quite good), we will have learned something about the role of experience in early development. We can then proceed to more specific studies. If, on the other hand, we fail, we can then either give up or design a new set of experimental rearing conditions. At any rate, the stakes are very high, and we know of no superior routes for investigation.

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Moment-to-Moment Tasks of Young Children*

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The cartoon figures were drawn by Mrs. Kitty Riley Clark of the Harvard Graduate School of Education.

Moment-to-Moment Tasks of Young Children

Introduction

On the basis of systematic repeated observation of a substantial number of three- to six-year-old children over a period of two years, we came to several basic conclusions. First of all, we identified a constellation of abilities we believed distinguished six-year-olds of high overall competence from those of low competence. Second, we made the judgment that highly-competent three-year-olds already possessed these distinguishing abilities to a surprising degree; more so, in fact, than six-year-olds of generally low competence. These assessments led us to choose as our first order of business; the problem of learning how, in certain cases, so much of what typified outstanding achievement at six came to be acquired by age three.

None of our competent three-year-olds had extensive formal educational experience. It, therefore, followed that to the extent that experience contributed to the development of competence at three, it did so in the informal, mostly familial, experiences of infancy and toddlerhood. Further, it followed that to the extent that experience was implicated in differential development, an analysis of the patterns of experiences during the first three years of poorly- versus well-developing children should reveal differences regularly linked with good and poor development.

One final orienting consideration was that the fragmentary existing information on the topic suggested that developmental divergence is not striking during the first year, but has become so, quite clearly, by three. We, therefore, were left with the problem of analyzing the experience of

the second and third years of life. Nowhere in the literature could we find information about the ongoing experiences of infants and toddlers nor could we find many analytic techniques for gathering such data. The approach that seemed most promising to us was the work of Roger Barker and Herbert Wright and their associates at Kansas. In their attempts at building a quantitative inquiry into human ecology, we believed there was the potential for gathering adequately-detailed information on the moment-to-moment experiences of young children.

The approach we have taken is not a conservative one in many respects. We observe children as they go about their normal activities. We tape-record a continuous series of remarks designed to include our best common sense judgments as to what the child is trying to do from moment to moment, along with other relevant information about stimulating factors, impediments, and his success or failure. After ten minutes of such recording with the onset and cessation of tasks timed to a tolerance of three seconds, we play back the tape and code the record during the next twenty minutes. Three such cycles are a normal half-day's work.

We constructed a coding scheme inductively from such running records. The preliminary scheme was field tested and revised more times than I'd care to mention over a period of about twelve months; at first with three- to six-year-olds, then with one- to three-year-olds. The result is an instrument with thirty-five classes plus a wastebasket category for those times when no purpose is even remotely discernible in the behavior of the subject. The categories are illustrated in the following series of Figures.

Figures Here

Let me emphasize one point. Neither the task labels nor the extended definitions in our manual constitute airtight behavioral descriptions. We have attempted to keep our inferences as closely tied to behavior as humanly possible. It is true that one could be considerably less inferential than we have been in recording ongoing behavior. There were two major reasons for proceeding as we did. First, we felt that more literal descriptions of behavior would have resulted in a totally unmanageable number of classes; and, second, we thought that this system of labeling the units of experience would prove useful in unraveling the interrelations among environmental factors and developing abilities. At any rate, we do not pretend that this is the only, or necessarily the wisest, way to attack the problem, but one has to start somewhere.

Informal tests of inter-observer reliability were an integral part of the evolution of the instrument. The uniqueness, complexity and precision of timing involved in this venture argued for modest aspirations regarding reliability. We set 2/3 or 66.7% agreement as our goal. If, for example, a two-year-old engaged in 30 tasks in 10 minutes, both observers had to have labeled at least 6.67 minutes of behavior identically to within 5 seconds before we considered the instrument to have minimally acceptable reliability. We recently completed a formal reliability study on 8 one- to three-year-old subjects. Thirty minutes of behavior was collated and coded on each subject making a total of 240 minutes.

The percent of real time where the observers agreed was 71%. These observers subsequently gathered similar data on 16 additional subjects. The design of the sample was such as to allow us to take a first look at the patterns of tasks as a function of age, sex, SES, and quality of rearing conditions. A note of caution about what follows: these data are insufficient for anything beyond illustrating the potential of the task instrument and for suggesting a few gross ideas about the experiences of young children. On the other hand, even with such a small quantity of data (720 minutes including some 20,000 tasks), a few of the comparisons listed reach statistical significance (* = significance @ .05 level, ** = significance @ .01 level).

Table I shows the most common tasks seen when the data are organized according to the conventional classifications of age, sex and SES.

Insert Table I

Discussion

A. Overall Analysis

1. Gaining information by looking steadily in one direction at an object or activity is by far the most common task across all analyses.
2. A good deal of apparent purposeless behavior was seen (non-task - 9.8% - third most common class).
3. Constructing products was rare (2.1%).

4. Experiences which appear prerequisite to constructing products (to explore and to master) were more common (7.5% and 6.1%).
5. Self-protective tasks (to assert self and to avoid unpleasant consequences, etc.) were rare.
6. Negative social purposes (to annoy, to dominate) were almost nonexistent.

B. Analysis by Age

1. Younger children spent twice as much time as older children in exploring materials and objects (10.7% vs. 4.8%*) and in mastery experiences (8.1% vs. 4.1%).
2. Older children spent more time constructing products (4.5% vs. $<$1.0%).
3. Older children spent more time gaining pleasure (2.1% vs. $<$1.0%).
4. Older children engaged in more to direct (.6% vs. .1%*) and provide information (1.1% vs. .1%*) tasks.
5. Younger children engaged in more assert self tasks (2.8% vs. .7%*).

C. Analysis by Sex

1. Boys spent more time in purposeless behavior (12.1% vs. 7.3%).
2. Girls spent more time in role play activities (9.1% vs. 7.3%).
3. Boys spent more time in gaining information through looking and listening (12.0% vs. 8.5%).
4. Boys spent more time in exploration and mastery tasks (9.8% and 8.7% vs. 5.7% and 3.8%).
5. Boys spent more time gaining pleasure (1.7% vs. $<$1.0%).

6. Boys engaged in more to operate a mechanism tasks (.5% vs. .0%*).
7. Girls engaged in more to eat (6.7% vs. 1.5%*) and to eat and gain information through sustained visual-inquiry (3.9% vs. .1%**) tasks.

Insert Table II

D. Analysis by SES

1. Middle-class children spent much more time in role play (13.8% vs. 2.4%**).
2. Middle-class children spent more time with mastery tasks (7.8% vs. 4.7%).
3. Lower-class children spent more time in purposeless behavior (12.0% vs. 7.5%).

E. Analysis of five individual children whose mothers were selected because they seemed to manifest clearly divergent caretaking patterns (see Table II).

a. Subject Information

(1) The "supermother":

Child - female, 2-3/4 years old, white, middle class; 1 female sibling, 1-3/4 years old; father present.

(2) The "overwhelmed" mother:

Child - male 20 months old, white, lower class; 1 female sibling, 9 years old; 4 male siblings, 4, 5, 6, and 11 years old; father absent.

(3) The "almost" mother:

Child - male, 20 months old, white, lower class; 1 female sibling, 5 years old; father present.

(4) The "zookeeper" mother:

Child - male, 20 months old, white, middle class; 1 male sibling, 4 years old; 1 female sibling, 6 years old; father present.

(5) The "smothering-super" mother:

Child - male, 2-1/2 years old, white, middle class; no siblings; father present.

Points of Interest

The "supermother" child engages in a lot of role play and social activity (often with her mother). There is very little time spent on prerequisite activities like exploration and mastery, very little time spent in purposeless behavior, and very little time spent in defending herself (avoid unpleasant consequences, assert self, etc.).

Conclusion

Like the techniques for assessing the target abilities and salient environmental factors, the task instrument has been developed for use in our longitudinal studies. We plan to select two kinds of families, one most likely to do a superb job rearing their children, the other group very likely to do rather badly with theirs. The task instrument will be used to sample regularly the experiential histories of these differentially-developing groups. The resultant data should be most useful as

a source of hypotheses about causal relations among environmental factors, resultant experiences, and consequences for the development of the target abilities. These hypotheses will be tested in subsequent longitudinal experiments with cooperating families.

NON-SOCIAL

1. To eat

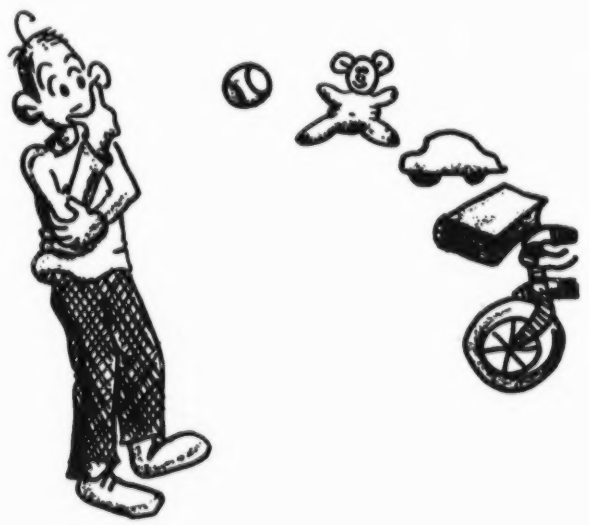
NON-SOCIAL

2. To relieve oneself

NON-SOCIAL
3. To dress/undress oneself

NON-SOCIAL
4. To ease discomfort

NON-SOCIAL
5. To restore order



NON-SOCIAL
6 To choose

NON-SOCIAL

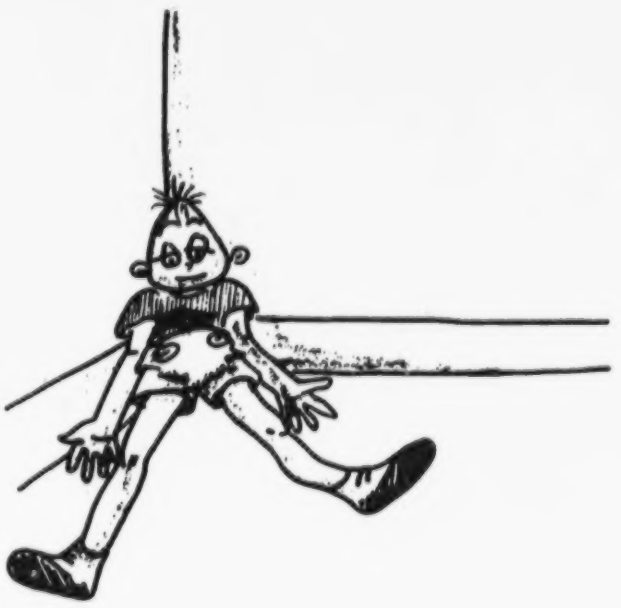
7. TO PROCURE AN OBJECT

NON-SOCIAL

8. TO CONSTRUCT A PRODUCT

NON-SOCIAL

9. To engage in large muscle activity

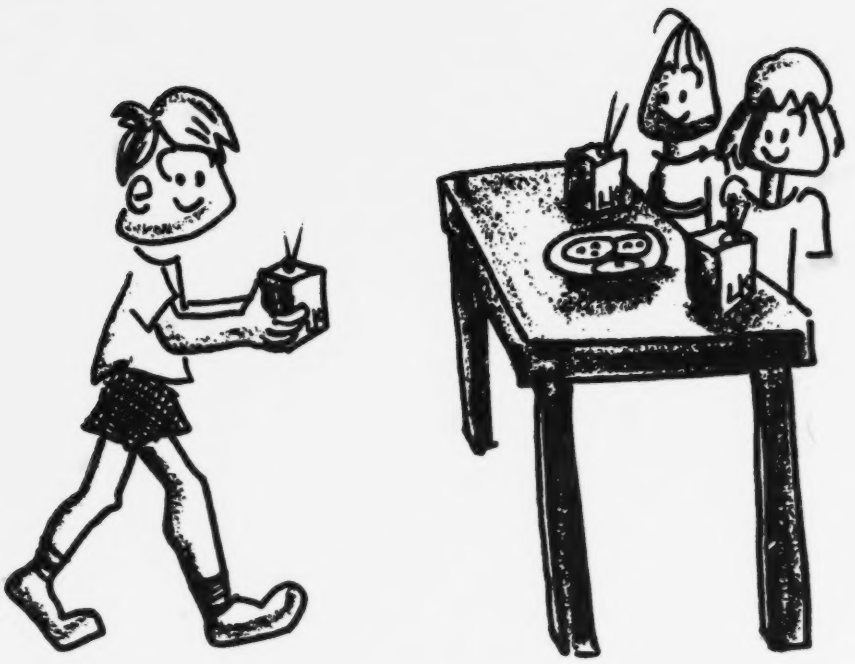


NON-SOCIAL

10. NON-Task behavior

NON-SOCIAL
11. To pass Time

NON-SOCIAL
12. To find Something To do



NON SOCIAL
13. To prepare for an activity

NON-SOCIAL
14. To explore

NON-SOCIAL
15. To pretend to be someone or something else

NON-SOCIAL
16. To improve a developing motor, intellectual, or verbal skill

a. auditory and visual

b. visual only

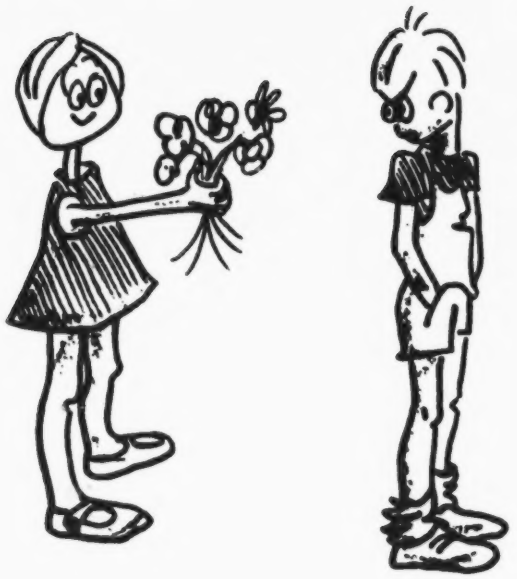
NON-SOCIAL

17. To gain information

NON- Social
18. To gain pleasure

NON-SOCIAL

20. To operate a mechanism

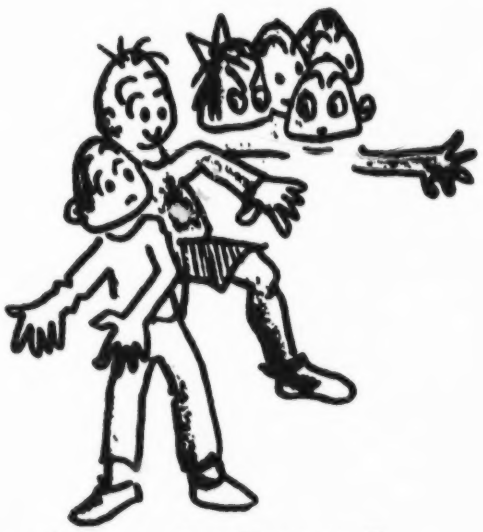


Social
1. To please/cooperate

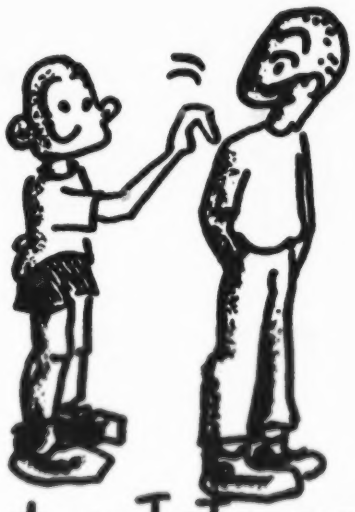
Social
2. To gain approval

Social

3. To procure a service



a. to join a group



b. to initiate social contact

c. To maximize the chance of being noticed

Social

4. To achieve social contact/To gain attention

Social

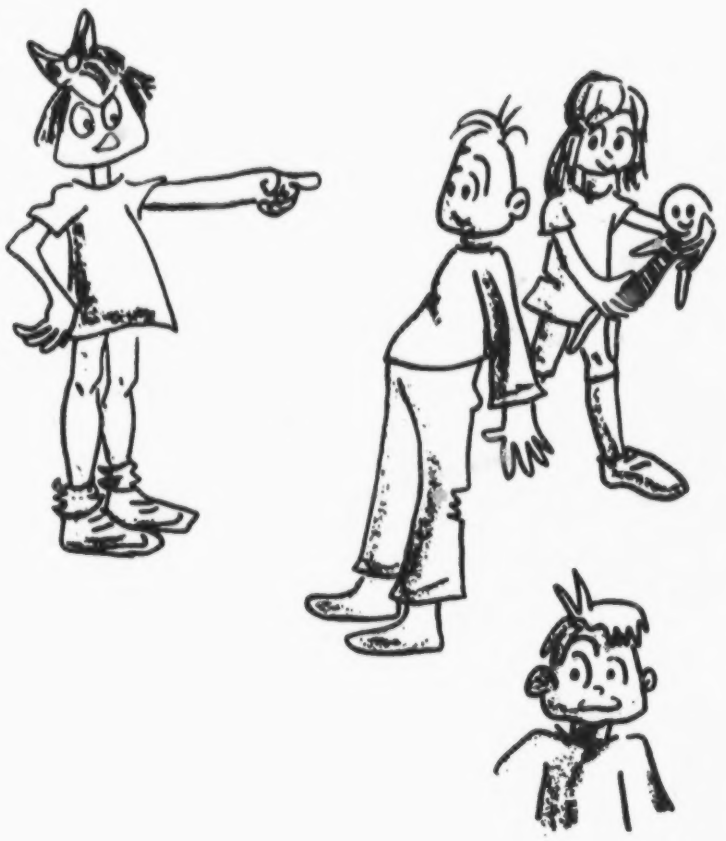
5. To maintain social contact

Social

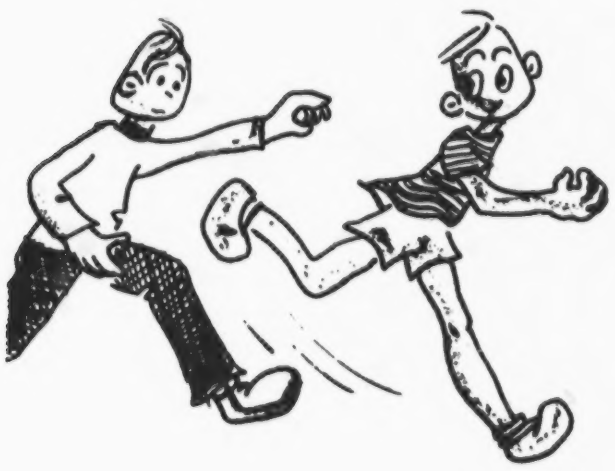
6. To avoid unpleasant circumstances

Social

7. To reject overtures, peer contact, To avoid attention



Social
9. To dominate, to direct or lead



10. Social
to compete, gain status

a. resistance To demands, orders or any trampling under foot

b. protection of property

Social

11. To resist domination, assert self

Social
12. To enjoy pets

Social
13. To provide information

Social
14. To Converse

Social
15. production of verbalizations

Table I

Rank Order of Categories Based on Mean Number of Seconds for That Category in a 600 Second Protocol

Rank	All Subjects N=24	Age: Young N=12	Age: Old N=12	Social Class: Middle N=12	Social Class: Lower N=12	Sex: Boys N=12	Sex: Girls N=12
	%	%	%	%	%	%	%
1	Gain Info. 21.7 (visual)	Gain Info. 22.5 (visual)	Gain Info. 20.8 (visual)	Gain Info. 22.7 (visual)	Gain Info. 20.7 (visual)	Gain Info. 21.8 (visual)	Gain Info. 21.5 (visual)
2	Gain Info. 10.3 (visual & auditory)	Non-task 11.1	Gain Info. 9.7 (visual & auditory)	Role Play 13.8	Non-task 12.0	Non-task 12.1	Role Play 9.1
3	Non-task 9.8	Gain Info. 10.8 (visual & auditory)	Role Play 8.5	Gain Info. 11.3 (visual & auditory)	Gain Info. 9.1 (visual & auditory)	Gain Info. 12.0 (visual & auditory)	Gain Info. 8.5 (visual & auditory)
4	Role Play 8.2	Explore 10.7	Non-task 8.3	Explore 7.8	Explore 7.5	Explore 9.8	Non-task 7.3

Table I

Rank	All Subjects N=24		Age: Young N=12		Age: Old N=12		Social Class: Middle N=12		Social Class: Lower N=12		Sex: Boys N=12		Sex: Girls N=12	
		%		%		%		%		%		%		%
5	Explore	7.5	Mastery	8.1	Maintain Social Contact	6.0	Mastery	7.8	Cooperate	5.8	Mastery	8.7	Eat	6.8
6	Mastery	6.1	Role Play	7.8	Explore	4.8	Non-task	7.5	Eat	5.1	Role Play	7.3	Explore	5.7
7	Cooperate	5.7	Cooperate	6.5	Cooperate	4.7	Cooperate	5.3	Maintain Social Contact	4.8	Cooperate	6.1	Cooperate	5.0
8	Maintain Social Contact	4.5	Eat	4.1	Construct	4.5	Maintain Social Contact	4.3	Mastery	4.7	Maintain Social Contact	4.1	Maintain Social Contact	5.0
9	Eat	4.0	Maintain Social Contact	3.0	Mastery	4.1	Eat	3.0	Procure Object	4.1	Procure Object	2.8	Mastery	3.8

Table I

Rank	All Subjects N=24		Age: Young N=12		Age: Old N=12		Social Class: Middle N=12		Social Class: Lower N=12		Sex: Boys N=12		Sex: Girls N=12	
		%		%		%		%		%		%		%
10	Procure Object	3.0	Assert Self	2.8	Eat	4.0	Achieve Social Contact	1.8	Construct	3.3	Assert Self	1.8	Procure Object	3.1
11	Achieve Social Contact	2.3	Procure Object	2.7	Procure Object	3.3	Assert Self	1.5	Achieve Social Contact	2.7	Achieve Social Contact	1.8	Construct	3.0
12	Construct Product	2.1	Achieve Social Contact	2.3	Achieve Social Contact	2.3	Ease Discomfort	1.1	Pass Time	2.5	Gain Pleasure	1.7	Achieve Social Contact	2.8
13	Pass Time	1.8	Pass Time	2.1	Gain Pleasure	2.1			Role Play	2.5	Eat	1.5	Pass Time	2.3
14	Assert Self	1.7	Ease Discomfort	1.3	Pass Time	1.5			Assert Self	2.0	Construct	1.3	Ease Discomfort	1.7

Table I

Rank	All Subjects N=24	Age: Young N=12	Age: Old N=12	Social Class: Middle N=12	Social Class: Lower N=12	Sex: Boys N=12	Sex: Girls N=12
15	Ease Discomfort % 1.3	Restcre Order % 1.1	Prepare for Act, Ease Discomfort % 1.5		Gain Pleasure % 1.8	Pass Time % 1.3	Assert Self % 1.5

Table II

Patterns of Tasks of Five Children

According to Divergent Maternal Characteristics*

Maternal Types

Task Rank	Supermother		Overwhelmed		Almost		Zookeeper		Smothering-Super	
1	Gain Info. (visual)	27.8%	Gain Info. (visual)	23.3%	To Explore	25.3%	Mastery	22.1%	Gain Info. (visual & auditory)	16.8
2	Role Play	18.8%	Non-task	13.8%	Non-task	18.8%	Gain Info. (visual)	21.1%	Mastery	16.3%
3	Maintain Social Contact	17.5%	Maintain Social Contact	9.5%	Gain Info. (visual)	16.7%	Non-task	21.1%	Role Play	13.0%
4	Construct a Produc	8.0%	Assert Self	8.8%	Gain Info. (visual & auditory)	13.2%	To Explore	15.3%	To Explore	10.3%
5	Gain Info. (visual & auditory)	4.8%	To Eat	8.8%	Mastery	10.5%	Pass Time	6.0%	Maintain Social Contact	9.8%

* Unfortunately the 5 children are not matched. It is quite unlikely that these task patterns are solely a function of maternal influences. For example, the 3 boys in the group of 5 children are all much higher on mastery tasks than the 2 girls.

Table II

Task Rank	Supermother		Overwhelmed		Almost		Zookeeper		Smothering-Super	
6	Procure Object	4.1%	To Cooperate	6.3%	Procure Object	4.8%	Ease Discomfort	6.0%	Gain Info. (visual)	7.5%
7			Gain Info. (visual & auditory)	6.3%	To Cooperate	4.1%	Avoid Unpleasant Circumstances	4.5%	Non-task	7.0%
8			Procure Object	5.0%			Assert Self	2.1%	To Cooperate	4.5%
9			Gain Attention	4.1%					To Construct a Product	4.1%